DOMESTIC ENGINEERING

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Suggestion:
Cut out; frame neatly; put in show window; change weekly.

IMPROVEMENTS.

Unsatisfactory plumbing and heating jobs can, frequently, be greatly improved and often made perfect by slight alterations or changes in fixtures or fittings. The removal of certain parts of poor quality and the substitution of articles of merit not infrequently greatly improves conditions. Now is a good time to have your work examined. If we can improve it we will do it well. If we cannot we will frankly tell you so.

Making Cheap Goods Sell Good Goods

The keen dealer is always glad to get good selling ideas,—pointers which will assist him in salesmanship. All the trade fears the department store. Every dealer believes in his heart that the time will soon come when stores of that character will be busy selling plumbing goods. Already that large and profitable line of bath room specialties seems to be quite well established in department stores, and other lines will gradually creep in. **How will you meet this competition?** Many readers of "Domestic Engineering" carry hardware and other lines in addition to plumbing, heating and mill supplies. **To meet dry goods store competition is easy.** To illustrate how easy it is we will repeat a conversation with one of our subscribers who sells hardware.

"A customer can be brought to see the fallacy of buying cheap goods and that by means of cheap goods, if you only go at it in the right way," he said. "Why, formerly I never had on my shelves a wash boiler that sold for less than $1.50 and from that up. A lady would come in and want to know what I had in wash boilers, I would show her what I had, but when the price was named, she would leave in nine cases out of ten, without purchasing, stating she could get a wash boiler down at the department store for 60 cents. I stood it for a while and after due consideration ordered a half dozen of the cheapest kind of cheap boilers I could buy. Now when a lady comes in for a wash boiler I am prepared. I go at it this way: I show her the cheapest one first, telling her it is the same as they are selling at the department store for 60 cents; that my price is 50 cents; then I go on to explain that it is really not worth taking out of the shop; that it might last for a few weeks only and might not be tight at all; but if she wanted a real good boiler, one that wouldn't rust the clothes and one that I was willing to guarantee in every way as being all right, that I had just what she was looking for; and in about every instance she would take the good boiler; anyway that half dozen cheap boilers lasted me more than two years.

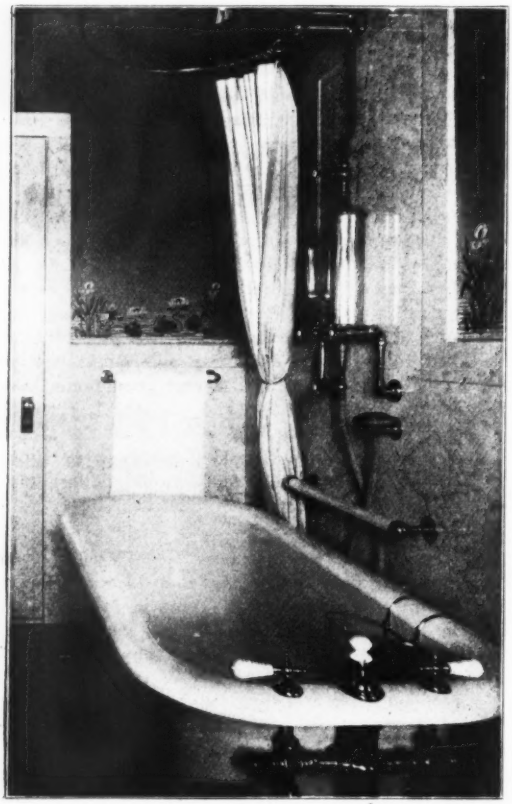
It is the same with garden hose. Never used to keep anything that I could sell for less than 15 cents a foot. Customer after customer would come in for hose but when the price was named they would hie to the dedepartment store where they could buy hose for 5 cents a foot. So I got a quantity of the 5 cent hose and advertised it for 4 cents a foot. They couldn't get around fast enough for that hose. I sold more hose that summer than I had sold in five summers before, but it wasn't the 4 cent kind, mostly the 15 cent. It was just the same as with the wash boilers. A customer would say, 'Here, you are selling hose for 4 cents?' and I would answer, why yes, here it is, but it really isn't much better than if it was made of so

much paper, may burst the first time you use it, but is almost sure to do so the second time. Same as that stuff they are selling down at the department store for 5 cents. But if you want a hose that will last and keep right, a hose that I can guarantee and stand behind every inch of, I have got the goods.

Result, they almost invariably ordered the 15 cent hose.

It's the same with the plumbing line. I show them the cheapest and poorest there is to be had; the cheaper and poorer, the better; and then put before them the best telling them that this water-closet combination, or whatever fixture it may be, can be had for so much, but will be sure to leak or get out of order, almost before it is put up, while if they want plumbing goods of the right quality, goods that I am willing to stand behind, and the maker guarantees in every way, I should be pleased to put in such a job for them. **In this way I have earned the reputation of selling quality goods and have built up a business of which I am not ashamed."**

This sensible talk will do you much good if you really want to sell good goods. If you don't, you won't read it anyway, for it's the don't care plumber who sells the cheap line. **Henry H. Gove.**



An attractive corner in the bathroom in Architect A. F. Rosenheim's residence at Los Angeles, Cal., installed by the Thomas Haverty Company, one of the leading plumbing concerns in that city.

Extra Business for the Shop

By Charles B. Starkey

Some of the greatest tasks ever accomplished in this world were successful because the mind behind the effort, after sufficient reflection, calmly decided to depart from the well worn paths of prevailing custom.

Such minds usually possessed the power of ever looking toward the brighter side of life.

These qualities, whether natural or acquired by a series of educational bumps extending through the years, will give any man a foresight which, rightly used, should place him in the front ranks of progressive business.

What Is Extra Business?

Some people think of extra business as a left-handed favor conferred by the fickle goddess Fortune. Something which drops from the clouds in an unexpected fashion until the fortunate heir to this unusual run of luck is almost unable to dodge the dollars which are shooting in his direction.

In real life, however, extra business is any honest proposition which will bring in surplus cash to the man *who is the master of his shop*. The greater number of plumbing and heating shops fail to develop a side line. This is due, in some instances to lack of knowledge, fear, or a false pride which leads them to believe any such practice would be beneath their dignity.

No such consideration governs the conscience of the hardware man who frequently dips into the plumbing and heating business with disastrous results to everybody.

Why Different Methods Should Prevail.

First: Because constructive methods and materials have improved; but not business methods.

Second: Because competition is keener and less judicious than in the past.

Third: Because the lack of system shown in many shops simply lines the business highway with failures.

In the general business life of the day two prominent successes may be noted. One is the specialist, the other the department store; yet few in the plumbing or heating business appear to have taken the hint from these instances in everyday life which are prominently before their very eyes.

Wherefore this leather-headed lethargy?

How would the following look as a business card?

J. Q. Jones, Plumber,
Sanitary Specialist.

Suppose Jones could make good upon the proposition and was posted regarding plumbing regulations, laws, and was an authority on that bug-a-boo, "sewer gas." Grant also that Jones had at his tongue's end the very best practical sanitary practices of the day, is it not a very likely proposition that Jones would have extra business?

Here is another:

Peter Smith,
Vacuum Heating,
Hot Water Pressure Heating.
A Specialty.

Mr. Smith has made a critical and experimental as well as practical study of vacuum and hot water pressure heating. He can tell the whys and wherefores and also the system best suited to each customer's needs. Mr. Smith can prove his points from actual work installed and can draw any system so the customer can readily understand. I wonder if any extra business would come Smith's way?

One more instance:

Richard Brown,
Gas Contractor and Specialist.

Mr. Brown knows the gas business from a to z. He can tell one all about both artificial and natural gas. He likewise will take your order for a job and install it completely, transacting all the details with the gas company and avoiding a lot of time wasted in red tape nonsense for the customer. Will Brown sit up nights worrying where his next month's rent is to come from?

A short time since the writer heard a heating and plumbing contractor remark: "The day is past when we plumbers go out and dig up business." In reply to such an absurd statement one can only hope that this man's bank account showed a good balance on the proper side for should he or any one else persist in such an absurd course the result is measured simply by the strength of that bank account.

The day has arrived when the average shop needs to spread out along different lines and to dip into other business connected with or bordering upon the craft. There are various improvements and inventions which can be mentioned and presumably others will occur to readers of this article.

SPECIAL BUSINESS CONSIDERATIONS.

It is time that the plumber and fitter got a broader view of the possibilities of the business along different lines. The following are some points which can be mentioned:

1. The sale and installation of heat regulators.
2. Special vacuum heating systems.
3. Hot water pressure systems.
4. The appliance and sale of steam traps.
5. Vacuum cleaning apparatus.
6. Equipments for hose.
7. Automatic drainers for pits and cellars.
8. Garbage installations.
9. Instantaneous water heaters.
10. Air pressure water supply systems.
11. Laundry apparatus.
12. Wind mills.
13. Gas installations.
14. Ice machines for the smaller cities.
15. The farmer trade.
16. Sanitary plumbing for large concerns,—this is a matter in which important changes are taking place.

Is that not a somewhat better outlook than the cleaning and repairing of a few boilers in the spring or bronzing of a few radiators which need freshening for the next season?

Does it not show that the twentieth century plumber or fitter needs to wake up and get both eyes upon the indicator and study salesmanship and business methods?

There are few businesses that have the opportunities which our craft affords, yet it has become a laughing-stock and byword in business circles, and everybody knocks the plumber. This would seem to be due to the neglect on the part of the plumber himself in not taking the position in the community which is his by right. Some will say: Why we have sold these patent articles for years. Sure, you have, but how hard have you pushed the sales?

Down in Indiana about three years ago a certain man sold a steam trap making a profit of about $30 besides the labor of installation. Apparently he was scared stiff with the prospect, or else concluded he had committed an unpardonable offense against the general practices of the craft, for he never has yet sold a second trap. The plumber needs to acquire the nerve to branch out along other lines and to stick to it when once started, grasping every legitimate business chance and pushing his prospects vigorously.

Examples of Wind Effects on Ventilation and Heating*

By H. W. WHITTEN.
(Member A. S. H. V. E.)

The effects of wind blowing against a building are manifold. The most apparent effect is the inleakage of air through crevices, particularly those about the movable windows and doors. In cold weather this inleakage becomes sensible or evident in the form of cold draughts which are often noticeable at a distance from the walls toward the interior.

The volume of this inleakage varies in proportion to the velocity of the wind, sizes of crevices, and means of egress of air from the building. It is also affected in a small degree by the pressure exerted by the expanded warmed air inside of the building. This pressure must be overcome before the outside air can enter. During the heating season this inleaking air, being of a lower temperature than at which the air inside is desired to be, must be heated.

Both these phenomena are apparent and their effects are common knowledge. Recent investigations have shown, however, that the variation in the volume of inleakage due to variation of wind velocity is much greater than was generally believed.

The least apparent effect, and, in the writer's opinion the most important, is the out-flow of warmed air through crevices in the sheltered sides of buildings.

Windows and doors are constructed with the primary object of excluding draughts from outside, but are not so well adapted to prevent air currents escaping from the inside.

The wind strikes an obstruction, a building is diverted from its natural course and is forced to pass by and over the obstruction. In doing this its speed is accelerated, the parted currents uniting at some distance beyond the building resuming their normal velocity.

This action produces an area of low pressure in the lee of the building which acts as a partial vacuum. This partial vacuum acts as a continuous pump on the crevices in the lee sides. As the pressure of the inside warm air is naturally outward, the combination of this pressure with the partial vacuum outside produces a greater loss than is sustained on account of inleakage, i. e., assuming aggregate amount of crevice on each side to be equal. This loss is greatly increased when other means that wall crevices are employed to admit outer air, such as cold air inlets for hot air furnaces, supply inlets for indirect or fan systems, etc.

It has been well said by a writer on this subject that "we are prone to notice only that which is evident to the senses." This outward flow of air is not attended by disagreeable draughts and, unless special means are taken to detect it, is not evident to the senses.

A few typical tests made by the writer and others the past winter in this connection should be of interest.

Given a school building, rectangular in shape, ends of building facing North and South, having stairway windows only in these ends; East and West sides divided into school rooms, each having 5 windows 5 feet wide by 9 feet high, window sills on a level with tops of pupils' heads when seated. Windows having usual clearance. Rooms heated by a fan system designed to supply 1,800 cubic feet of air per hour per pupil, with inlet velocity of 750 feet per minute. Wind north-west, velocity 14.5 to 15 miles per hour, outside temperature 33 degrees. Room No. 5 situated on the East side of first floor building, one room removed from South end, showed an average rate of supply velocity of 817 feet per minute and a vent velocity of 340 feet per minute. Inlet and outlet of same size. Inlet 8 feet above floor, outlet at floor and both on opposite side of room from windows. This showed a loss of 457 feet per minute. An air test of this room showed 10 parts of Carbon Dioxide in 10,000. This loss was practically all above the breathing line and frequent complaints of headaches among scholars occurred.

Other rooms on the East side of building showed as follows:

	Rate of supply.	Rate of vent.
1st floor, Room No. 3.....	760	410
1st floor, Room No. 6.....	753	396
2d floor, Room No. 13.....	690	315
West Side:		
1st floor, Room No. 7 (partly sheltered)	660	700
2d floor, Room No. 14 (exposed to strongest wind effect)	410	705

TEMPERATURE CONTROL IN USE IN THE BUILDING.

Average temperature East rooms at the breathing level ....73°; at floor 70°
Average temperature West rooms, breathing level .....68°; at floor 58°

A test of another school building with wind at 18 miles per hour and outside temperature 30 degrees, building heated and ventilated by gravity

*Read at the summer meeting of the American Society of Heating and Ventilating Engineers, held at Indianapolis, Ind., July 15 and 16, 1909.

indirect system, showed an average of 20 per cent loss from the supply ducts in rooms on the windward side and an addition of 60 per cent to the vent velocity.

Rooms on the leeward side of the building showed an addition of 30 per cent to the supply velocity and a reduction of 62 per cent of the vent velocity.

A school building having a few corridor windows on the north side, and school room windows on the East, South and West was tested with typical results, as follows: Wind, 20 miles per hour, direction northwest. Room No. 26 on East side of building two movable windows, 7 feet wide by 9 feet high, one tight window 10 feet wide by 9 feet high, sills level with breathing level. Inlet 8 feet from floor, 4 feet from East wall, volume of air supply 2,340 cubic feet per minute, volume of air passing out vent 1,451 cubic feet per minute.

Room No. 28 South side of building, near East end, windows same as No. 26, volume of supply 1,863 cubic feet per minute, volume of air passing vent 1,311 cubic feet per minute.

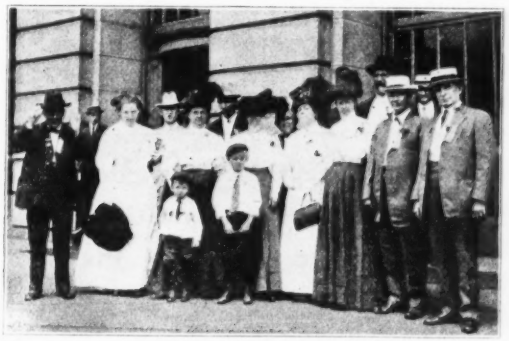
A test made by A. B. Franklin of Boston and the Massachusetts District Police on a school building some years ago is also interesting. Wind, 25 to 30 miles per hour, and blowing toward a majority of windows in the building.

Room No.	Air supply at inlet. cu. ft. per min.	Air removed at outlet. cu. ft. per min.
(exposed)	1837	2367
"	1533	2307
"	1996	2838
"	2244	2990
(partly sheltered)	2200	2368
" "	760	805
(exposed)	1694	2391
(partly exposed)	2517	2777
" "	1609	2031
" "	2253	2762
" "	1389	1653
(partly sheltered)	2391	2288
(partly exposed)	1984	2394
(exposed)	568	1154
(partly sheltered)	1602	1773
Hall (sheltered)	7833	5786
(partly sheltered)	2153	2442
" "	1863	2148
(exposed)	933	1404

A High School building was recently tested by Prof. H. C. Anderson of Michigan University, there being some question as to whether the heating contractor had put in a competent apparatus (fan system). The supply seemed of sufficient quantity and temperature, but rooms on the exposed sides of the building could not be satisfactorily heated. After shutting down the fan the supply ducts were closed in the rooms on the exposed side of the building and, with all doors and windows closed, it was found that as much air was being removed from the vent ducts as the fan system was supposed to supply. During this test the outside wind was of moderate velocity.

The writer recently had occasion to examine the ventilating system of a hospital. The heating season was over and the fan was not in operation. Supply inlets were in inner walls and about 10 feet from floor. Vents were about 12 inches from floor. Outside wind 6 to 7 miles per hour. Anemometer showed no movement of air at inlets. Window crevices showed safe inleakage on exposed side and outleakage on sheltered sides. Vents in rooms on exposed sides showed a normal outflow, but those in rooms on sheltered sides showed a reverse current into the rooms. An examination of the attic (which was quite large) showed that the vent ducts ended at the attic floor and were covered with ¼-inch mesh wire screens. There were a few windows in the attic and a ventilator about 4 feet in diameter was placed on the roof. Very little air movement could be detected through the ventilator which was of the ordinary hood type. The vents from rooms on the exposed side showed an upward current into the attic, but those on the leeward side showed a corresponding downward flow. Average velocity in each case was about the same. Odors of drugs could be detected in rooms far remote from where such drugs were used. The wire screens covering attic vents leading to rooms on sheltered side of building were covered with a cobwebby sort of dust, while those covering vents from the opposite side of building were clean.

Tests of several buildings in which the leakage about outer openings had been standardized by means of a metal expansion joint showed an average difference between supply and vent flow of 12 to 15 per cent, the greater part of this being due to difference in temperature of air at these points.



"All the Way from Texas." Our good friends from the State of Texas were on hand in most creditable numbers at this year's annual convention of the National Association of Master Plumbers held recently in Detroit. They proved themselves very active indeed and were never found wanting when it came to promulgating the splendid opportunities offered in their glorious "Lone Star" state. Photograph by our Mr. Below.

Some Pointers on Tapping a Water Main

By Phoenix

"Say, Bub, ye ain't goin' to tap that main without shuttin' off the water, are ye?" asked the venerable superintendent of waterworks in a small city of the West where once I chanced to be stopping in order to get together a few pieces of money during hard times. "Why we **always cut the water off when tapping.** It's the safest way," continued this honest man of old. "Say, Grandad," I answered, "you light away from the edge of the bank there and quit knocking dirt down my neck. Keep your eyes open now and you may learn something."

To a man who had been over the trails for several years this little bit of **local coloring** seemed indeed curious.

The first main I ever tapped held a pressure of 120 pounds, which I found quite sufficient for the worn-out machine furnished me by the company for which I was working. I had never tapped the main in any other way than against the pressure, consequently, having such a good chance, I decided to teach this rural superintendent a few things, which I succeeded in doing, as the main was, in this case, successfully tapped against a pressure of nearly 90 pounds without an accident, much to his surprise.

It pays to have a good machine and one which can be depended upon at any stage of the game. This tapping machine costs about one hundred dollars and should always be kept in the best condition. Any journeyman should be fired immediately who puts the machine away at night neglecting to wipe it up thoroughly. He should have sense enough to quit a little early if he failed to find time enough to attend to this important duty.

A sufficiently large box with a cover should be provided to hold the tapping machine and attachments, and also two or three pipe and monkey wrenches, ells, corporation cocks, a hammer and cold chisels, etc. A few compartments in the box will not be found amiss, for then the assortment will not resemble in composition and order a Welch rarebit dream.

It is especially important that the saddles and rubber gaskets be kept clean and sound, otherwise some day

A mighty practical article describing actual working conditions and experiences in tapping mains.

when working the machine and when least expected the pressure may cause disastrous results by blowing out the gasket and flooding the hole, before the water can be cut off. This means that about half a day will be wasted in bailing or pumping out the water or possibly the banks may cave in and fill the hole, in which case the entire excavation will have to be renewed.

It is better for the man who makes the tap to have something to say about just how the hole shall be dug. In the first place, **have plenty of room about the pipe the entire distance it is exposed, which should be not less than three and one-half feet.** The depth under the water main should be not less than two inches. The hole should be dug something after the manner of sketches, shown in Figures 48 and 49, which will give a clearer idea of what is necessary. An excavation made thus gives the journeyman just about room enough to work in comfortably and he can sit on the bench of earth, getting a good brace with his feet against the main while there is plenty of room for shoulder movement in pulling the lever, in the ditch behind.

One man can, alone, make any ordinary tap, but it is better to have a helper along to stand on the bank and hand down the various parts of the machine and

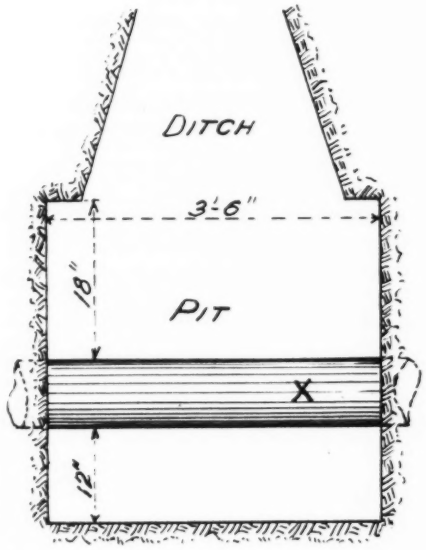


Fig. 48. Showing general view of the excavation for tapping the main as viewed from above.

other tools, and also to **keep other people away from the banks.** A man should refuse to enter a cave or tunnel.

I have seen taps made where the workman was at least fifteen feet inside an unplanked tunnel. Suppose a cave-in had occurred, what would have become of the journeyman?

In making the tap, it is well to locate the machine a little to one side as shown by letter x in Figure 48. This makes the pipe line, by using two ells and a nipple, when connected, hit the center of the ditch. It also gives a much better swing on the handle of the machine. Some people recommend making the tap at an angle of 45 degrees, one of the reasons for which is, I believe, **to get an easier bend when using a lead pipe connection.**

I can see no use whatever for this practice, besides

it is more difficult to tap at an angle than directly on top.

Climb into the ditch and wipe the main clean with an old cloth or newspaper, **being sure no dirt, mud or small pebbles remain to get under the rubber gasket and cause trouble.**

Then call for the gasket and place it on the main where the tap is to be made. There is the iron saddle to come next and it is curved to fit the size of main being operated upon.

Place this saddle upon the rubber gasket evenly and

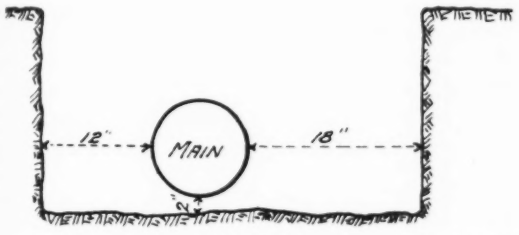


Fig. 49. A side view of the excavation when prepared for the journeyman to start operations.

then in a recess of the saddle place the small rubber gasket, upon which establish the machine.

Run the chain under the main, being sure that the links draw true. Then fasten down the machine. Pull it down reasonably tight, then hammer the chain some, taking out any twist that may have occurred; after which tighten down the machine to stay, first on one side, then on the other, being careful to get an equal bearing upon each side, which will give a true hold upon the rubber gasket. **This is a small point, but it is mighty important, for if it is done carelessly there is liable to be something doing when the pressure gets in its work.**

Be sure that the machine is entirely tight before beginning to drill. Machines differ. In some the cor-

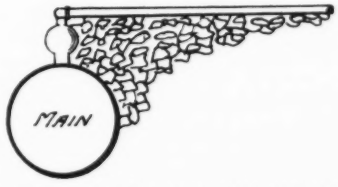


Fig. 50. The main with corporation cock in place and water supply pipe properly supported started toward the residence.

poration cock is placed inside the tapping machine at the start and, after the hole is drilled, the tap is backed out, the machine swung half around and the corporation cock forced in, being screwed to place with proper care. In others the machine is taken apart, being so constructed that it holds the pressure meanwhile. Start the drill easily and do not feed it too rapidly. It is easy to tell when the drill pierces the main, and here is **another point where it is not wise to feed the drill too fast.** It can be told when the drill has furnished the proper thread by noticing position of the bar. Generally there is a notch, or line marked sufficiently plain for the purpose, which indicates the proper depth.

When entering the corporation cock never attempt to send it home with the ratchet, as it will be ruined if this course is pursued. Screw it in sufficiently tight to hold and after the machine is removed, give it one or two more turns with a wrench. It is necessary to be very careful in doing this and judgment must be used or the job may be spoiled by breaking this brass corporation cock.

When the job has reached this stage, take the machine out of the hole and put on whatever connections desired to unite the galvanized pipe with the main.

The writer has used both lead and iron connections, and where the water will permit the use of iron pipe, it should be used. Connections can be made after the fashion represented by Figure 50, which shows the corporation cock located directly on top of the main and two ells connected by a short nipple. The space under the water pipe should be filled with stones, brick or good solid dirt, well tamped down, so that the pipe has something upon which to rest, as indicated in Figure 50. This renders the pipe firm and places it in such a position that any pressure from above will not tend to spring or bend it. In case the machine goes wrong or any accident occurs by means of which the water gets into the hole, from the main, before the job is completed, it is best to know the location of the nearest gate in the main which will cut off that section of the main **being operated upon.**

The helper should catch up the key and make for this gate at his best pace, closing it down carefully and keeping it shut until all damage is repaired. Therefore it is a good thing to always **have a cut-off key upon the job before starting operations.** When the water is again let back into the main, considerable care is necessary not to let it in too rapidly, or the great pressure which the water causes may, coming suddenly in contact with some weak joint or fitting, start it to leaking badly or even break the fitting at the first shot.

"And Who, Pray, are These?" Why they constitute a portion of the delegation sent to the Detroit convention by the good city of Rochester, N. Y. They were very much in evidence, too. Photograph by our Mr. Winslow.

Some of the Everyday Experiences of a Master Plumber*

By Charles Hoffman, Mansfield, O.

In the life of a master plumber, as well as in the life of any other business man, there is sunshine as well as clouds, pleasant experiences as well as some that are exasperating and provoking enough to make a man say that which would not look well in black and white.

Conventions Patches of Sunshine.

One of the little patches of sunshine that helps to brighten a master plumber's life is the pleasure and privilege of attending a convention of master plumbers and enjoying the fellowship of so congenial and friendly a body of men. The interchange of ideas, and the telling of experiences out of the ordinary routine of daily work are of such a character that one must be dull, indeed, who would go home from such a gathering without having gleaned any new thought about his work, or improved methods of doing it.

By this interchange of ideas may we not be enabled to accomplish greater results, and in a measure add to the sum total of human happiness, by installing plumbing systems that will be a joy forever to their owners?

The benefits to be derived from being a member of this association—one of the best organized bodies of men in the country—are manifold, although some do not realize this and are derelict in their duties, shirking the work, but quite willing to profit by the labors of others in making these meetings a success.

Among the many good things accomplished by this organization might be mentioned, the securing of **good legislation in regard to sanitary matters, the weeding out of incompetent men, the interchange of ideas** in relation to the everyday business of life; and last, but not least, **the feeling of good fellowship** that is engendered by the coming together of men engaged in the same line of work from different sections of the state.

In the hustle and bustle of our everyday struggle, and the solving of the many puzzling problems that confront us, let us assist the weaker brother and not rejoice at his failure.

Plumbers' Associations Helpful Organizations.

This organization has been a help, and it has in no small measure brought about the kindly feeling that prevails among the master plumbers; and where formerly there was suspicion and jealousy, now there is a feeling of good fellowship and harmony, and a disposition to stand by one another and lend a helping hand whenever it is possible.

Seldom does the average person stop to consider to what great extent his health (and incidentally his happiness), depends upon the faithfulness and honesty of the master plumber. What a comfort and convenience is a plumbing system that has been installed in a conscientious and satisfactory manner, by a master plumber whose sole aim and object is, not to see how big he can make the bill, but to do his work the best it can be done, and just a little bit better than his competitors would do it.

But how quickly will fault be found and complaint made when anything goes wrong, whether it be the fault of the plumber or of the negligent householder! Proper sanitary plumbing is not considered so much of a luxury today as it was twenty years ago, but has come to be looked upon in the light of a necessity.

The increase in the population in the cities and larger towns has made it imperative that a more complete system of plumbing and sewerage be adopted, in order to protect the health of the community; and to that end laws are made making the installing of adequate plumbing systems compulsory.

What the Plumber Has Done for Society.

While many persons consider the plumber almost as great an evil as a highwayman when the time comes to settle their bills, they do not stop to consider the other side of the question; the comfort and convenience brought about by the modern appliances in the plumbing business. Not so many years ago the average person was obliged to content himself with a rather meager supply of water, in a basin, or perchance the family washtub, when he desired to take a bath. Today, by turning on a bibb, he can have an abundance of hot or cold water, and a tub whose proportions are not limited to ten or twelve inches.

A Few Experiences in the Plumbing Craft.

Perhaps a few personal experiences will not come amiss. Several years ago I installed a plumbing system in a residence, and, of course, guaranteed the work. Everything was all right and no complaint was made, until last week, when the plumbing system was allowed to freeze (the house being unoccupied at the time). A leak was discovered, and then an urgent call was sent over the phone for a plumber, with the remark that as this plumbing had been guaranteed, the repairing should be done gratis. Upon declining to do this repairing for nothing, they said they would get some one else. I remarked, they certainly would be obliged to pay some one else, the same as they would me. After waiting several days, they phoned me to do the work, and do it as cheaply as possible.

Another case was that of a lady who was having a plumbing and lighting system installed in an old brick house. To one of the workmen she remarked, that he must be tired, and told him to sit down and rest awhile. When he told her that objection might be made to his soldiering, and that she would be obliged to pay for the time lost, she said he had worked hard enough and was entitled to a rest, and she would be willing to pay for all the time he lost while resting. She kept hindering the workmen and preventing them from going ahead with their work, and when the bill was presented, she immediately raised a howl about the size of the bill, and reported that the men were not working all the time, and she did not think that she should be charged for the amount of time put in. As this was a day work job we were under the necessity of telling her that she would be obliged to pay for all the time

*Read at the eighteenth annual convention of the Ohio State Association of Master Plumbers, held in Springfield, O., February 16 and 17, 1909.

put in at her house, whether the men were engaged in talking to her, or putting in their time installing the plumbing.

Of course you have all met with the stingy soul who objects to paying for the time the workman consumes in going to and from the place where the work is being done. One would be led to think that we did not have to pay the men for that time.

Romance in a Plumber's Daily Life.

Not all of a master plumber's life is prosaic; sometimes a little romance enters into the otherwise practical work of his daily life. Recently a little romance was brought to light by the loss of a diamond ring. A gentleman was seriously injured and taken to the hospital. He was consigned to the care of a pleasant-faced nurse, who, while healing his bodily injuries, caused a more serious and lasting injury to that organ known as the heart. An engagement followed; and as a token of his regard he gave her a diamond ring. While engaged in her duties at the hospital she accidentally let the ring fall in a closet while it was flushing. A hurry call was sent to our office, and workmen were hurriedly sent to the hospital. After a search of two days we finally located the ring, and restored it to its owner, who had given up all hope of ever seeing her ring again. She even tried to discourage the workmen, and was exceedingly grateful, and raised no objection to the bill.

Attendance at such a gathering as this should give us new inspiration to do better work and raise our aspirations to a higher level, **no longer being content to do our work well, but aiming to do it in the best and most satisfactory manner,** so that we may be able to carry out to its fullest intent our National motto: **"They builded better than they knew."**

Sound Travel in Pipes

We have received the following additional suggestions as to causes of sound travel in water pipes and its prevention:

J. H. Swartz, of Crane Co., Omaha, Neb.

Referring to the question of noise in water pipes, I think, if your correspondent will examine the shut-off in the main feed or supply pipe to the building, that he will find it partially closed or else that something has lodged in the main feed pipe reducing the opening and causing the water to rush through and create the noise.

I had a similar experience at one time and several plumbers had tried to fix it without success. I found the stop cock (a compression stop) partially closed and after opening it wide there was no further noise. This may not be the trouble in this instance, but it sounds very much like it.

It would do no good to pack the pipes with anything as the sound is carried through the water and pipes and not through the building construction.

A tank supply at the top of the building is a very fine system and is necessarily adopted in many high buildings, but, if the main supply to tank had that hissing noise, it would travel through the water just the same unless the supply discharged over the tank above the water line.

A. R. McGonegal, Sanitary Engineer, Washington, D. C.

Regarding the question of hissing noise when a cock is opened, I am inclined to think that the installation of a Mueller or other approved type of water pressure regulator would overcome the trouble, although it might affect the volume of water. A hissing noise generally is present in connection with high pressures. There are also noises caused by loose washers, partly opened gate valves, too small meters, and by the vibrating or poorly fastened piping, as well as by the well recognized water hammer.

In designing a water distributing system it is an excellent idea to put on a regulating device to cut down the pressure to say 15 feet above the top fixture, and then have the sizes of the various supply pipes large enough in area to care for a majority of the fixtures being in use at one time, incidentally saving waste of water, wear of washers, and strain due to water hammer.

Factory Sanitation

By Thos. M. Landers, Inspector of Plumbing, Richmond, Va.

Regarding the question of sanitary plumbing fixtures suitable for installation in a six-story factory building, where a large number of workmen are to be employed, I would like to state that I recommend fixtures of that class only, which are made unusually strong, simple in construction and at the same time sanitary. We have at this time under construction here in this city a building similar to the one in question, and I have therefore recently given this matter much thought and consideration.

Water closet recommended by Plumbing Inspector Thos. M. Landers, of Richmond, Va., for installation in factory buildings. This is plate 125 from the 1909 catalogue of Thos. Kelly & Bros.

Factory Lavatories.

Regarding lavatories, it seems to me, that a wash sink of the long enameled iron type of sufficient size and with a large waste connection meets all requirements.

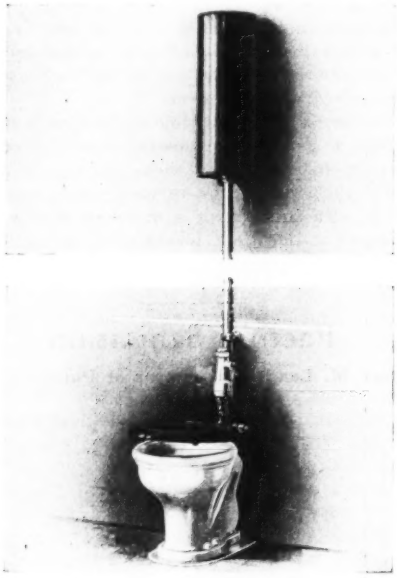
Factory Water Closets.

I would recommend individual iron enameled water closet of the seat action type with closed galvanized iron cylinder tanks, such as the Kelly automatic water closet, Plate 125, or Mott's Cyclo pneumatic closet, Plate 5083-A. We have some of these closets installed

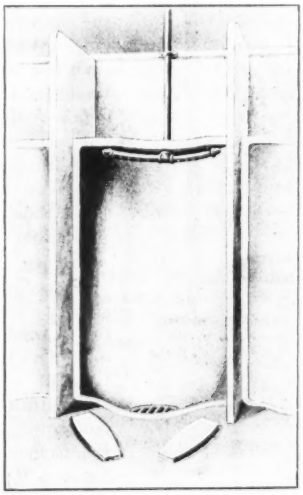
here in our city under similar conditions and they have given entire satisfaction.

Factory Urinals.

I consider it a good idea to install solid porcelain urinals in batteries of two, three or four, and have



Type of water closet recommended by Thos. M. Landers, Inspector of Plumbing, Richmond, Va., for installation in factory buildings. This is plate 5083-A from the catalogue of the J. L. Mott Iron Works.



Urinal with foot rests in floor suitable for installation in factory buildings.—Reproduced by courtesy of "The Metal Worker."

them flushed from an automatic tank. I would, however, suggest partitions of slate in preference to iron.

* * *

In describing the plumbing in the Lackawanna Railroad Station at Scranton, Pa., "The Metal Worker," in a recent issue shows a type of urinal fixtures which would no doubt prove well suited for installation in factory buildings. The sides of this urinal form the stall, and a sheet of water flows over the cylindrical back at each flush. The user is practically compelled to stand close to the urinal, because it has a step in front and footprints in the terrazzo floor.

Questions and Answers

This Department is maintained for the use of every reader of "Domestic Engineering." We solicit problems from you and will give them our best attention. In stating your questions please give all of the facts as clearly as possible and when necessary accompany your question with a correct layout of the job.

WHAT REMEDY SHALL BE USED FOR RUSTY WATER?

Springfield, Mass.—To the Editor of "Domestic Engineering." Sir: About six months ago I finished plumbing and heating a residence, using all brass pipe and a 40-gal. copper range boiler which is heated with a coil from the hot water house heater in the winter months, and with a cast iron hot water tank heater in the summer months and on wash days. When the tank heater is in use on wash days the hot water comes in a red and rusty state. As the hot water is on circulation and the piping brass with a copper range boiler, I fail to see the reason for the water becoming rusty. Please enlighten me. **B. W. J.**

If you have the cast iron hot water heater so connected that the water used comes in contact with the heater probably there is some chemical combination in the water that acts upon the iron and thus produces the rusty water of which you speak. We would suggest that probably the easiest way to remedy matters would be to place filters upon the faucets.

WHAT PROPORTION EXISTS BETWEEN THE RANGE BOILER AND WATER FRONT?

Council Bluffs, Ia.—To the Editor of "Domestic Engineering." Sir: Can you tell me what size of water front goes with the various sizes of range boilers, say 35 to 50 gallons in capacity? In so doing you will oblige. Yours truly, **G. M. S.**

It is conceded that the storage boiler should have a certain relation to the number of gallons of hot water which is used every day, and that the capacity of the heater also should not be forgotten.

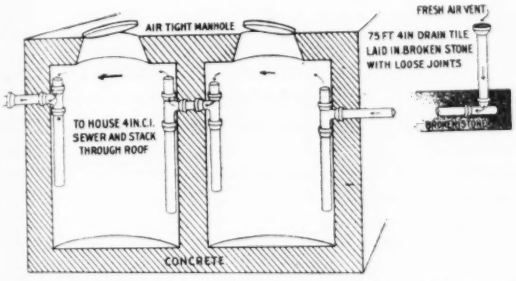
If the heater is too small the result is that the water will never be hot. Reverse the case and the tank will be frequently doing a song and dance act.

The waterback of the ordinary range has some 110 square inches of surface exposed to the action of the fire. This size water back is generally used with most successful results on boilers holding from 35 to 50 gallons of water. In larger houses the tank should be figured large enough to hold sufficient water for the greatest amount that will be used at any particular hour of the day; and the heater large enough to produce water to meet the average amount. For instance,

should the rush hour of the day call for 500 gallons, and the average hour's consumption be 250 gallons, use a tank that will hold 500 gallons, and a heater that will supply slightly in excess of 250 gallons per hour.

HOW ABOUT THIS SEPTIC TANK?

186. **Washington, D. C.**—To the Editor of "Domestic Engineering." Sir: I would like to know if the system, a drawing of which is here given, would work for a country job of plumbing? I wish to run 75 feet with


AIR TIGHT MANHOLE
FRESH AIR VENT
75 FT 4IN DRAIN TILE LAID IN BROKEN STONE WITH LOOSE JOINTS
TO HOUSE 4IN C.I. SEWER AND STACK THROUGH ROOF
CONCRETE

Tank planned for country job. Question raised as to its fitness for this purpose.

4-inch terra cotta drain tile, laid with loose joints and broken stone. **S.**

If loose joints mean that the joints will not be cemented, we should think that the drain would stand a first-class show of becoming stopped up in due time. We would advise "S" to cement these joints.

So many inquiries are being sent in regarding septic tanks that we publish, in answer to others along the same line, a full description and illustration from J. J. Cosgrove's work upon "Sewage Purification and Disposal."

A SMALL SEPTIC TANK.

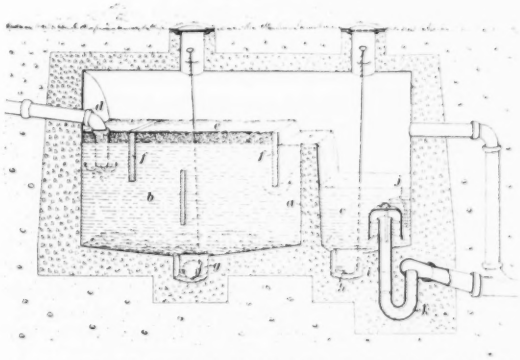
Birmingham, Ala.—To the Editor of "Domestic Engineering." Sir: Will you be kind enough to give me some information relative to small septic tanks, and if possible publish an illustration that may throw additional light upon the subject? **Z. E. B.**

We reproduce an illustration and partial description from "Sewage Purification and Disposal," by J. J. Cosgrove, which seems to cover the inquiry. In the sketch a is the wall which divides the tank into two compartments, of which b is the tank proper; c represents the collecting and discharge chamber; d is the point from which the sewage enters the tank. It will be noticed that this pipe turns down and is submerged, which is to prevent the sewage from disturbing the scum upon the surface, represented by letter e. One of the baffle boards, f, deflects the flow of sewage towards the bottom of the tank, while the other, which extends down about three feet below the surface of the liquid, prevents the surface scum from being washed over with the effluent and insures the discharge from the tank being taken from near the center level, where the sewage is most clear. When baffle boards are used they should be spaced about ten feet apart. The board nearest the inlet should project a few inches above the line of flow and to within two and one-half feet of the bottom of the tank.

The middle board should be set with its upper edge about 18 inches below the surface and its lower edge some 18 inches above the bottom of the tank. The scum board near the outlet should extend a few inches above high water level, and the bottom edge should be midway between the surface of sewage and the bottom of the tank.

A valved sludge pipe, g, provides the means for draining off sludge from the tank without putting the tank out of service. It will be observed that the floor of the tank slopes toward this outlet. When the effluent is discharged into a stream, the tank c may be omitted. When the effluent is treated by filtration, as effluents should invariably be, the dosing chamber c should be so proportioned to the filter beds that one dose will properly flood the filter area. The floor of the dosing chamber is made sloping towards the center, where is located the valved outlet, h, which should be cross-connected to the discharge to the filter beds, and to a sewer outfall, so that the effluent can be discharged direct at the place of disposal, or supplied continuously to the filter beds during repairs to the automatic siphon. The wall which separates the dosing chamber and the septic compartments should be made sufficiently strong to hold back the liquid in the septic tank and to withstand the varying strains caused by slowly filling and quickly emptying the dosing compartment.

The siphon apparatus shown operates as follows: When sewage overflows the wall, a, into the dosing chamber it rises in the bell of the siphon and over-



A properly constructed septic tank which is worthy of considerable study on the part of our readers.

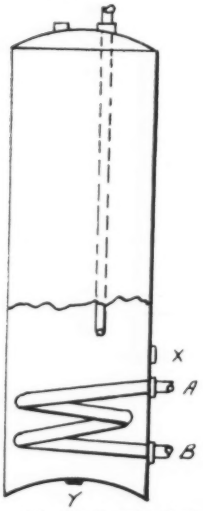
flows into the trap, which it seals, thus confining the air in the space, i, which forms the long leg of the siphon. As the sewage effluent then rises in the dosing chamber it compresses the confined air in the long leg, thus forcing the water down on one side and up on the other, as shown in the illustration, until the compressed air in i is just about to escape under the bend that forms the dip of the trap. Any further flow of liquid into the dosing chamber will then compress the water in i so that the confined air can escape from the trap, carrying with it some of the water; as the air escapes from i the space fills with water from the dosing chamber, thus filling the long leg of the siphon, which at once is thrown into operation and aspirates the contents from the dosing chamber. When the

effluent in the dosing chamber is lowered to the level of the mouth of the air pipe, j, the siphonage is slowly broken by the admission of air through the pipe. Besides serving as a vent to break the siphon, j, permits the air to escape from the space, i, when sewage is flowing in to fill the dip of the trap.

The depth of liquid in the dosing chamber, that will cause the automatic siphon to discharge, depends on and can be gauged by the depth of water in the short leg, k, of the trap. An overflow pipe is provided to carry off the effluent in case that the siphon becomes obstructed. This overflow pipe serves also as a vent pipe through which air can circulate from the outlets at the filter beds or other place of disposal up to and through the perforated covers of the manholes.

WHY NOT PUT THE COIL IN THE TANK?

Harrisburg, Pa.—To the Editor of "Domestic Engieering." Sir: Is it always necessary to place the coil in the steam boiler when you desire to heat the water in a range boiler, making use in the winter of the steam heating boiler located in the cellar? It seems to me some other means could be taken, for some times the double connection at the range boiler does not work in the most satisfactory manner. Please advise in your "Questions and Answers" department.—**X. Y. Z.**



Sketch showing manner in which range boiler may be heated by a coil instead of having the coil in the furnace or heating boiler.

Put the steam coil in the range boiler. A steam coil can be placed in a vertical as well as a horizontal boiler, as shown in the illustration. Lead the steam directly into the coil at point marked A and drain it at B, taking care somewhere along the pipe connected to B to place an air valve in such a manner that it will not be flooded with the condensation. The usual connections can be made with the water back at points X and Y.

WHAT ABOUT LETTERS OF RECOMMENDATION?

Boston, Mass.—To the Editor of Domestic Engineering, Sir: I have been in the habit of demanding references from my men before I would hire them, but from some of the experiences I have gone through I begin to doubt the wisdom of such a course. Will you let us hear from you upon the subject?

Investigator.

The opinion of the Editor of this department is that if "Investigator" ever made a trip through the west he would no longer "doubt the wisdom," but he would be mighty sure that letters of recommendation never yet assisted a man in holding down a job.

In fact they are harmful rather than of assistance for they lead the employer to expect big things at once of the person referred to. There are few such letters but what flatter the subject to an unusual degree and consequently when he tries to live up to their qualification he falls down abruptly. West of the river every tub stands on its own bottom and if it can not, then they get another tub.

A good man does not need any recommendations. His work will speak for itself and quickly at that.

The employer who can not size up a man by his work on a job and general appearance in less than half a day's time (I almost said half an hour) and who guides his shop practice by letters of recommendation deserves to get stung a few times just in order to wake up to the fact that the world is moving.

DIMENSIONS OF RANGE BOILERS RELATIVE TO CAPACITY.

Indianapolis, Ind.—To the Editor of "Domestic Engineering." Sir: Will you please give me some information as to how many gallons various sizes of range boilers will hold? **J. B.**

In answer to your question we publish sizes from 30 to 200 gallons.

	Boiler Size.
30 gallons	5 ft. by 12 in.
40 gallons	5 ft. by 14 in.
52 gallons	5 ft. by 16 in.
66 gallons	5 ft. by 18 in.
82 gallons	5 ft. by 20 in.
100 gallons	5 ft. by 22 in.
120 gallons	5 ft. by 24 in.
140 gallons	4 ft. by 30 in.
144 gallons	6 ft. by 24 in.
168 gallons	7 ft. by 24 in.
185 gallons	5 ft. by 30 in.
192 gallons	8 ft. by 24 in.
203 gallons	5½ ft. by 30 in.

SOMETHING THAT REALLY HAPPENED.

A certain large mail order house recently filled an order from a distant customer for one Philadelphia hopper ($1.10), which was duly received and installed by the customer, in his basement, writes a subscriber for "Domestic Engineering."

About a week afterward the customer wrote the mail order house, stating that the flush of the hopper was not sufficient, and that he could not make a tight connection on the supply arm, and that he felt the goods were sold him under misrepresentation, etc., and that he wanted his money back.

So the mail order house wrote him a very nice letter, stating that if he so desired he could return the hopper and upon receipt of it they would return his money.

The customer then wrote the house that he was returning the hopper, enclosing a copy of his freight receipt, which read

"One Hopper, weight 700 lbs."

When the hopper was received it was found that the bottom flange was imbedded in a square block of concrete, two feet square and a foot thick, which had been used by the customer in an attempt to make a solid foundation, and being unable or unwilling to get it loose, he had shipped it back just as it was, with accompanying freight charges of $4.80.

Management of the Receiving Department of a Wholesale Plumbing, Steam and Mill Supply Business

The receiving of goods entails at best considerable detail. How to take care of these details in a jobbing business, having something like ten thousand items in stock, may be of interest to many who find their Receiving Department not entirely satisfactory.

In dealing with the system, or methods employed it will be necessary to say a few words relative to orders received from the customer, and orders placed with the manufacturer.

Customers' orders, as received, when not delivered in person, are copied upon a **regular shop order slip** (see Fig. 1). Carbon copies are made at the same time, a copy being delivered to each of the departments that are called upon to furnish goods to complete the particular order. The original goes to the shipping clerk, and the customer's order goes into the file. The copies either bear the customer's order number, or else the date of his order. If he has been quoted on the goods the number of the quotation is also placed on the copy. A department not having on hand certain goods called for makes the necessary notation on his copy at the time he sends the goods to the shipping offices. **A back order** is then made

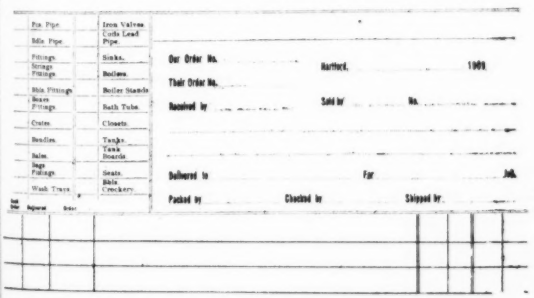


Fig. 1. Regular stock order slip. Customer's orders are copied on this form. Special goods are also copied on this form, as follows:

100—½ plain malleable ells, galvanized—50—**$7.00—$3.50.**

20—4½ XH malleable galvanized crosses.

The last item is ordered. A copy of the order goes to the receiving clerk, being special. He retains the copy on special file, as described, and cross-indexes under "crosses."

out. This indicates that an order has been placed with the manufacturer for stock short. Back order blanks are similar to Fig. 1, except in color. Both kinds of slips are held in the shipping office.

Purchase orders (see Fig. 2) are made in triplicate. The duplicate goes to the Receiving Clerk, and the third copy in the case of a regular stock article, is delivered to the department carrying it. If the goods desired are special, the Receiving Clerk retains the copy on a clip made under the name of the customer. These copies are cross indexed under the name of the goods. The copies or orders for regular goods are filed under the name of the manufacturer in a **horizontal cabinet of twenty-five shallow shelves** (see Fig. 3), each shelf being wide enough and deep enough to accommodate the copies. They are arranged alphabetically. Orders for goods sent to the manufacturer

Hartford, Conn.,

Order to

Ship via Terms

Must have by Ordered by

ALL ORDERS MUST BE ACKNOWLEDGED UPON RECEIPT. GIVE NUMBER OF THIS ORDER.

NOTICE.

DON'T DELAY THIS ORDER.

If for any reason you cannot fill promptly, please communicate with us at once.

ORDER № 25365

PUT OUR ORDER NUMBERS ON ALL BOXES, BAGS, PACKAGES, ETC.

☞ SEE THAT THE NUMBER OF THIS ORDER IS ON YOUR BILL.

Fig. 2. Purchase order slip. Copies of all orders mailed are given to the receiving clerk, as described. Purchasing department also retains copy in loose-leaf binder.

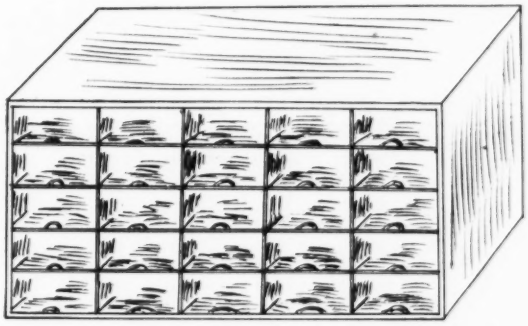


Fig. 3. Receiving clerk's cabinet for copies of orders sent. Spaces are 1½ inches high, and they are wide and deep enough to take in a second sheet flat. The shelves are arranged alphabetically, and in some cases one entire shelf is devoted to one concern's slips.

bear a request that all shipments made shall be plainly marked with the order number upon which the goods apply. A similar request is made relative to the invoices. **A list of the orders sent out** is retained by

the Receiving Clerk. This list (see Fig. 4) is of course arranged numerically with reference to the order number. Opposite the number may be found the name of the manufacturer, a minute of the goods, and whether for stock or ordered special for some customer. A space is provided for date upon which the

No.	Name	For	Goods	Rec'd	Remark
20410	Dayton M.I. Co.	J. Reilly	Iron brace	5/20	
20411	E.C. & B.	C.I. Stock	fittings	6/6	Bills open
20412	Day-Ward	Stock	tube		

Fig. 4. Order register, used in disposing of goods as received. All packages must bear order number.

goods were received. In this way the Receiving Clerk can quickly dispose of goods as received.

If goods are special they are at once turned over to the shipper together with the slip above referred to as being filed on a special file and cross indexed. In case the goods are for stock they are sent to the department ordering them. They in turn inspect, and place them in stock, and send a **list of the goods** to the Receiving Clerk. These lists are on sheets held in a loose-leaf binder chronologically. The Receiving Clerk adjusts these sheets to the binder as received together with the **record of special goods** which he has personally attended to. He also checks off upon his receiving slips the goods recorded on the sheets in the binder.

A further record (see Fig. 5) is also kept which makes it impossible for a package to go astray after it

Date	Pro. No.	Pkgs	Billed As	Wt.	How Recd	From Whom	Trans. Chgs	Order No.	Remarks
4/02	12981	10846	Lead traps	2400	Frt.	Tatem Lead		25402	
		Box	packing		C.L.	Draper C. Rule	40	24980	
	482	20846	I.P. fittings	4800	Boat	J. Simmons		24420	Bad condition

Fig. 5. Page from book for keeping track of packages as received.

once reaches the building. An ordinary blank book is used for this purpose. The truck man as he brings the material has a receipt giving the proper numbers, packages, and description of same. This, together with the order numbers, and weights are placed in the book. The name of the manufacturer from whom the packages were received is found and also placed in the book. This little device, besides showing that the packages have been received, is also of great advantage in checking off freight bills. The sheets in the binder also show the weights, and number of packages, and are effective in checking off the invoices for the goods.

The Receiving Department is considered necessarily a part of the Purchasing Department. For this reason the cabinet of receiving slips already referred to is of double importance. Besides aiding in the receiving of the goods, they are also the basis of a system for keeping after the manufacturer until all the goods have been received. All letters received, and copies of all letters sent, relative to orders, are given to the Receiving Clerk, who reads same, and attaches them to his copy of the original order. When goods are billed he makes a notation on the copy of the order. In this way a complete record of the orders is at all times at hand. Promises of shipments made by the manufacturers are kept after by the use of a "tickler." An ordinary "tickler" or day-file is used for this purpose. Bits of paper are placed in the file under a reasonable date which is usually gained from the correspondence of the manufacturer. Each day these slips are investigated under that date, and if the goods are neither received nor billed, a rush letter is mailed.

To the successful jobber prompt service is of the utmost importance. Much benefit is derived with this end in view through a well-managed Receiving Department.

Storrs Ely Emmons.

RIO DE JANEIRO NEEDS PLUMBING SUPPLIES.

There is a growing demand in Rio de Janeiro, Brazil, for the latest sanitary fixtures and plumbing supplies and all the accessories which go to make up a modern equipment in bathrooms, both public and private, writes United States Consul-General George E. Anderson from that city. Nearly all Rio de Janeiro city proper is now piped for the most modern sewerage service, and full provision is made therein for modern plumbing. There are large districts in the outlying suburbs to be improved in a similar way, so that the business is likely to grow considerably in the near future. The sewerage and water connections are given unusually thorough inspection, as is necessary in a city, which has gained so much from the introduction of modern sanitary methods and appliances. On the whole, fittings for water connections run lighter in weight than in the United States, owing to the fact that the water pressure generally is low, and also to the fact that frost is never to be considered. From the introduction of the first modern sewer system by an English corporation until comparatively recently English merchants were generally in the lead in such matters, and most of the imports of such goods are English, and to some extent fashion favors English ware. The United States, Germany and Belgium, in the order named, however, have a fair share of the trade. American fittings and appliances seem to be popular and apparently there is a good opportunity to extend the trade. There is an increasing use of enameled iron closets, baths, and uninclosed lavatories.

FRISCO JOBBERS SECURE BETTER FREIGHT RATES

Geo. H. VanArnam buys John T. Knott's interest in the Knott-Van Arnam Mfg. Co. at Fort Wayne, Ind.

Geo. H. Tay Company, of San Francisco, adopts special label guaranteeing all its high grade plumbing fixtures.

BETTER FREIGHT RATES FOR SAN FRANCISCO.

Word has reached San Francisco to the effect that a re-adjustment has been made in the rates on west bound goods across the Isthmus of Panama. There is a considerable reduction in the rates on brass goods and pipe and it is expected that jobbers in plumbers' supplies will take advantage of the cheaper rates to have more of their goods come by this line. A new steamship line has been started between coast ports and New York and this will have the effect of reducing ocean freight rates and wholesalers there will probably anticipate their wants far enough in advance now to have a considerable portion of their shipments come by the water route instead of by the transcontinental lines.

MR. KNOTT SELLS OUT TO MR. VAN ARNAM.

George H. Van Arnam, of the Knott-Van Arnam Mfg. Co., of Fort Wayne, Ind., has purchased the interest of John T. Knott in that concern. As Mr. Van Arnam has had almost entire charge of the plant for several years past, this will make no change in the policy of the concern which will continue the manufacture of high-grade closet tanks and seats. By attending strictly to business and seeing that the goods they have produced have been first class, they have built up a big demand for their goods. There will be no change in the name of the corporation. Mr. Knott and Mr. Van Arnam have been the best of friends since they attended school together, and this change is not caused by any differences whatever. They felt that this offered an opportunity to both for increased responsibility and usefulness. Mr. Knott will engage in the manufacture of automobiles and we know he will succeed.

GEO. H. TAY CO. ADOPTS NEW POLICY.

The George H. Tay Company of San Francisco, Cal., has now placed a label upon all its high-grade plumbing fixtures guaranteeing them against defective workmanship, in accordance with its new policy as announced some time ago and all goods now sold are being stamped with a special trade mark label done in gold. Not only will this concern furnish new articles of similar design to those that prove to be defective through any fault of manufacture or workmanship, but will also pay all costs that are necessary for replacing. Of course it will be necessary in all cases that a prompt report be rendered in the case of defective material as a representative of the George H. Tay Company will personally investigate all such reported cases and the new fixtures will be installed under his supervision. There have been so many cases reported in the past year of substitution in plumbing goods that this move on the part of the Tay Company is regarded as being a timely and precautionary measure that will meet with the approval of all concerned. When an owner visits the warerooms of this concern now and makes a selection of goods he can rest assured that he will get what he has picked out and that it will not be possible for the plumbing contractor to go to some other store and purchase goods of similar design but inferior quality and leave the owner to believe that he has secured the best. Owners are being instructed to look for the Gold Label of the George H. Tay Company after the goods are installed and if it is not found they can rest assured that substitution has been practiced. In case the material is defective the owner stands no loss, nor does the plumber unless it is clearly a case where it is inferior workmanship on his part and not in manufacture that is to blame.

THE HEMPSTEAD PLANT COMPLETED.

The Hempstead Brass Company, of Hempstead, L. I., N. Y., has completed the erection and equipment of its new factory and is now able to fill orders for its products.

"At the Flag-Day Celebration" of the Pfau Manufacturing Company, in Norwood, Cincinnati, Ohio. Reading from left to right those in the picture are: Charles Harris, president of the Norwood Board of Public Service; Edward Pfau, vice-president of the Pfau Mfg. Co.; Emil Kahus, councilman; Charles H. Jones, mayor of Norwood; H. Langdon Laws, director of the Pfau Mfg. Co.; Charles Pfau, president; and Clifford C. Pfau, secretary and treasurer of the Pfau Manufacturing Co.

WILL DEAL IN MILL SUPPLIES.

The K. I. Herman Machinery Company, of Chicago, has been incorporated with a capital of $25,000 to deal in machinery and mill supplies. The incorporators are G. I. Herman, George J. Kroeck and B. M. Kroeck.

EXCLUSIVE SALES AGENTS.

Olin, Gibberson & Hilands, of 2 Rector street, New York City, have been appointed exclusive sales agents in the New England and Middle states for the line of iron body gate valves manufactured by American Valve Company, of Coxsackie, N. Y.

MOVES ITS ST. LOUIS OFFICE.

National Lead Company has moved its St. Louis offices to the ninth floor of the Liggett Building, 722 Chestnut street, but its city order department remains at the old address, Clark avenue and Tenth street.

TO LOCATE AT WESTBROOK, ME.

The Maine Screen and Ventilator Company, a new corporation, will locate its factory at Westbrook, Me. This company is a consolidation of what was formerly known as the No-Draft Ventilator Company, of Westbrook, and the Maine Screen Company, of Fairfield.

SPECIAL INDUCEMENTS TO MANUFACTURERS.

E. R. Lumsden, of 27 South Sixth street, Indiana, Pa., a well known master plumber, informs "Domestic Engineering" that the local Board of Trade is prepared to make some attractive inducements to manufacturers to locate in that city.

CAMERON SCHROTH CAMERON CO. LEASES LARGER BUSINESS HOME.

The Cameron Schroth Cameron Company, of 189-191 Michigan street, Chicago, has leased the six-story and basement building at Rush, Michigan and North Water streets, having a total floor area of 76,000 square feet, for a term of years at a gross rental of $161,250. Extensive improvements are planned to make it an ideal home for their plumbing and heating supply business. The property has excellent switch connections with the Chicago and Northwestern Railroad.

WESTERN TRADE GOLF ASSOCIATION.

The Western Trade Golf Association, the new organization which was formed in Chicago last month, and which will hold golf tournaments every three or four weeks during the four summer months, held its August tournament yesterday (August 6th) at the Exmoor Country Club, Highland Park, Ill. (The fact that "Domestic Engineering's" last news form goes to press early Friday morning prevents us from giving a report of the event in this issue.) Any individual connected with the heating and plumbing supply business in the Central Western States is eligible to membership in the association upon payment of annual dues of $2, the membership applying to individuals and not to firms. The dues will be used to defray incidental expenses of the organization while the expense of each tournament will be paid by special assessment by those who are able to be present. The officers of the organization are: Paul Blatchford, president; J. W. Watson, vice-president; R. B. Flershem, secretary, 284 Michigan avenue; D. E. McCabe, treasurer, 48 Dearborn street; all in Chicago.

HOW TO SELL STEAM AND WATER GOODS IN MEXICO.

The best method of reaching prospective purchasers of steam, electric, and hydraulic machinery in Mexico is by the maintenance of a representative who will travel from place to place, writes United States Consul Thomas W. Voetter from Saltillo. By careful reading of the press and from news which an able man would receive from acquaintances a representative would learn of enough new enterprises in Mexico to keep him busy looking after them. If the home office should consider the expense of maintaining such a representative too great, it might join forces with one or two other firms which have allied lines, but not competing ones, so that the expenses of the joint representative could be divided. One good contract landed will pay the expenses of a good man for a long time, and one installation satisfactorily completed will be a good advertisement for another. Very many foreign firms maintain agencies in the City of Mexico, and the advertisements of these representatives of German, British, French, Belgian, and Swiss firms appear constantly in the Mexican newspapers.

THE MUELLER ANNUAL OUTING.

Saturday, July 31, the plant of the H. Mueller Manufacturing Company at Decatur, Ill., was closed and the members of the company, their employes and families went to Miller Park, Bloomington, Ill., for a day's outing. Some two hundred and fifty persons were specially invited and attended as guests of the company. These included Mayor C. M. Borchers, the city council, city officials, master plumbers, journeymen plumbers and their families. Four special interurban trains were used in transporting the party to the scene of the festivities, forty miles distant. At Bloomington the party was met by the Business Men's Association, Mayor Carlock and the city council of that city, who in forty or fifty automobiles, followed by a platoon of police, acted as an escort to the visitors while they paraded the street to Miller Park. Goodman's Fourth Regiment Band, a celebrated Central Illinois musical organization, furnished music. There were six large American flags in the parade and each staff was surmounted by pieces of Mueller brass goods. Red, white and blue pennants bearing the word "Mueller" were carried on bamboo canes by the employes and the parade was quite an imposing affair. Arriving at Miller Park the employes scattered beneath the shade trees and enjoyed a picnic dinner. A band concert, athletic events on land and on the lake, filled out a happy day. After supper the party danced at the pavilion, returning home by late trains on the interurban. The Aid Society which had active charge of the affair is an organization formed for mutual benefit by Mueller employes, with a death and sick benefit, and the Mueller company encourages and supports the society in every undertaking.

DEMAND FOR STEEL INDICATES BRISKER MARKET

It is predicted that 1910 will be the banner year in the history of the iron and steel trade in the United States.

July shows a gain of over 3,000 tons in iron melt over previous month.

GENERAL BUSINESS SITUATION OPTIMISTIC.

Chicago, Ill.—The advance in steel prices predicted last week took place Monday. This increase amounts to $1 a ton on steel bars, angles, plates and beams. It is expected that about September 1 an advance will take place in the price of tubes. The railroads seem to be preparing for a large amount of business. An order said to have been the largest in the history of freight car equipment was announced early in the week from the offices of the Pennsylvania Railroad. This order for freight car equipment amounted to something like $8,500,000. The Pennsylvania promised some time ago to add about 20,000 new cars to its service and is now fulfilling the promise. The Harriman lines placed an order for lumber, amounting to $750,000, with parties in Oregon. This deal will call for material enough to build over 4,000 cars. The crop reports are favorable, the outlook for corn and wheat being bright and the situation seems to be shaping up for a healthy growth of business along all lines. President Corey of the Steel Corporation is quoted recently as saying: "The output of iron and steel in the United States in 1910 will be the largest in the history of those industries. Present conditions indicate that it must be so, among which conditions are that basis of all prosperity, the crops. With the prospect of a yield of more than 3,000,000,000 bushels of corn and other cereals in proportion nothing but the greatest catastrophe can prevent a big boom in business. Analysis of the reports of the mining industry and manufacturers in general shows that trade all over the country has improved strikingly, and that it will continue to improve. The Steel Corporation has been booking orders in excess of capacity ever since last May, and they are still coming in. The Gary plant next year will produce 1,500,000 tons of steel. All these things lead me to the inevitable conclusion that next year will be the greatest in the history of iron and steel in the United States, for both the Steel Corporation and independents, and this condition will be reflected in those industries in Europe." It is reported that the mills in many sections are flooded with specifications and that in some cases deliveries cannot be made in less than ninety days. The daily melt in July was 67,375 tons, while that of June was only 64,330, a difference of over 3,000 tons in favor of the month of July.

LEAD ORE MARKET DULL.

Chicago, Ill.—According to reports received from Joplin, Mo., the lead market there shows no improvement over last week's prices, ranging from $55 to $56 per ton, with but a small tonnage disposed of at those figures, as producers are holding back for more favorable prices on lead, and selling the zinc ore, for which an active demand exists at $44 to $45.

COST OF COPPER PRODUCTION.

Out of 10 Lake copper mines reporting costs and production only four show a cost per pound of less than 12 cents for the year 1908. These are the Baltic, with a cost of 7.72 cents; Champion, 8.34 cents; Osceola, 10.53 cents, and Wolverine, 7.32 cents. The last named is the cheapest producer at the Lake, for although the Calumet & Hecla does not show its operating figures it is generally understood that the cost per pound is about 8.5 cents. The mines which report the low costs, of course, are all fully developed and dividend payers, and for this reason the construction expenditures are relatively lower than in the developing properties.

NEW YORK METAL MARKET, AUGUST 3.

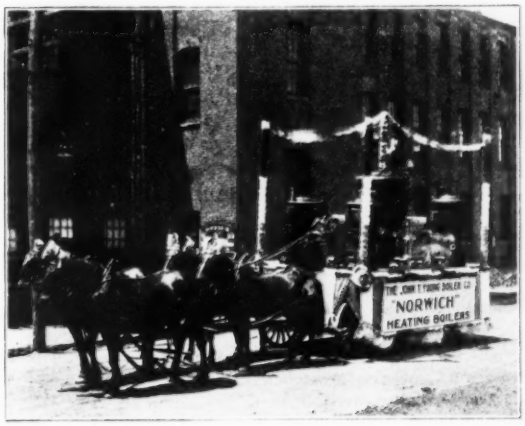
Copper, Prime, Lake	$13.50
Copper, Electrolytic	$12.95 to 13.05
Antimony, Cookson's	8.37½
Lead	4.35
Straits Tin	29.60
Spelter	5.50

CHICAGO IRON MARKET, AUGUST 5.

Southern, No. 2 Foundry	$17.35-17.85
Northern, No. 2 Foundry	17.00-17.50
Lake Superior Charcoal	19.50-20.00

August 5, 1909:

Foundry iron was 50c a ton more than week previous
50c less per ton than the year previous
Copper was ¼c more than the month previous
½c more than the year previous



"Ready to Start." The John T. Young Boiler Co.'s float in the 250th anniversary celebration parade in Norwich, Conn., on July 5, 1909. The photograph shows part of the plant of this "young" and energetic concern.

CHICAGO OLD METAL MARKET.

Chicago, Ill.—Dealers' buying prices are as follows:

Clean heavy copper and wire	$12.00
Light copper	10.75
Heavy composition	11.00
Heavy yellow brass	8.50
Light brass	6.25
Heavy lead	4.00
Tea lead	3.50
Scrap zinc	4.00
Block tin pipe	24.00

NEW YORK OLD METAL MARKET.

New York.—Dealers' buying prices are as follows:

Heavy crucibled copper	$11.75 to	12.00
Heavy copper wire	11.00	11.50
Light copper	10.00	10.50
Plumbers' cocks and faucets	9.00	9.50
Heavy brass	8.00	8.50
Light brass	6.00	6.50
Solder joints	6.25	6.50
Heavy lead	4.00	4.10
Tea lead	3.75	3.85

A NEW AND EXTENSIVE USE FOR COPPER.

Chicago, Ill.—Trolley wires covered with steel, copper sheathing for vessels strengthened by the same material and telephone and telegraph wires fashioned so as to afford the highest resistance to the elements with the least possible weight are among the many achievements announced by the Colonial Steel Company of Pittsburg as the result of a long series of experiments dealing with the welding of copper and brass to steel, says "The American Metal Market." The development is important, as it gives Pittsburg a new industry and that district another outlet for the consumption of its principal product. The company's plant is at Colonial on the Ohio River, and there for almost two years former Representative James W. Brown and an intelligent force of workmen have been solving the problem. It has now become a commercial reality and the company is operating to capacity. Details of the manufacture of the new metal, if it can be so termed, are not given out, but it is shown that an ordinary steel bar is treated with copper or brass and then passed through the rolls much after the fashion that steel plate is made and at about the same speed. After the required number of passes have been made the copper becomes almost a part of the steel, and the product possesses all the properties of copper to which is added the strength of steel. The possibilities of the industry are without end, now that the process has proved its utility, and the company is manufacturing rods for wire mills and sheets for manufacturers of a thousand and one different articles which were formerly made of steel alone. The wire produced by the process is particularly interesting. A three-inch billet is made into a three-eighths wire rod, which is in turn manufactured by the wire maker into wire as fine almost as heavy thread. This has been subjected to every possible test, and found to meet the full theoretical conductivity. Telephone wires are prepared with a copper wire, to which the steel is welded and on this in turn is welded a thin coating of copper. These made in the smallest sizes prove of exceptional utility since the steel prevents them from sagging as does a full copper wire, and they can withstand the most severe weather. The trolley wire is another curiosity. The inside is copper to which the steel is welded in the rolling process. It is thus able to stand the wear of the trolley wire, and at once commends itself to the manufacturer as well as the trolley operator. The steel coating has no influence on the utility of the wire. Should the above statements prove true the effect on the consumption of copper would be serious.

ALUMINUM SOLDER.

After innumerable attempts by a large number of would-be inventors, which generally ended in complete failure, it remained for Dr. Otto Fr. Reinhold to discover a formula for making a practical and successful aluminum solder. This solder has successfully withstood severe tests as to strength, time and electrolysis. Above all, it is extremely practical, being easy to use. It makes a perfect joint, and appears to be stronger where soldered than the metal itself. It does not disintegrate with time, even though exposed to the weather or to an electrical current's passing through it.

An unusual feature of the Reinhold solder is that it is used absolutely without a flux. The reason so many aluminum solders have failed heretofore is because they contained mercury in the solder, or some strong chemical in the flux, it being considered necessary to put these in in order to obtain sufficient adhesive and cleaning qualities. The Reinhold solder, however, contains no mercury or other substance which would cause disintegration; but nevertheless it makes a remarkably strong joint. The mere fact of the existence of a perfectly practical and successful solder now on the market opens up a new field for the use of aluminum by plumbers, roofers, skylight manufacturers and other metal workers, of such an unlimited extent that the future alone will be able to show us how many things now made of other materials will hereafter be made of aluminum.

Suppose, for instance, that tin could not be practically and cheaply soldered, but only riveted; there would undoubtedly be but a small percentage of tin now used in comparison with the present enormous output. For many uses aluminum is much better as a material than tin. It has better sanitary qualities, will not rust when exposed to water or the elements, is much lighter, can be painted more effectively and it will not soil other materials which adjoin it.

Aluminum for cooking utensils of all kinds, bath room supplies, leaders, architectural work, roofs, cornices, skylights, metal signs and tubing can now be used by the use of aluminum solder. It will not be very long before architects will be specifying aluminum for many of the above named purposes; therefore it behooves all plumbers to become acquainted with this new product, in order to be up to date and ready for aluminum structural repair jobs when they come along. This solder is being placed upon the market by the Reinhold Noflux Aluminum Solder Company, of 53 Demarest street, Newark, N. J., which is ready to sell the solder in any quantity from a 25-cent sample bar to wholesale lots.

PLUMBING INSPECTION

ALL PLUMBERS TO BE EXAMINED.

Topeka, Kans.—Plumbing Inspector W. J. Gibbs and members of the plumbing board held a meeting this week at which arrangements were made to start the examinations of journeyman and master or employing plumbers under the new ordinance which went into effect August 1. The examinations will be started on August 10, and those engaged in the plumbing business either as journeymen, masters or employers, must secure application blanks from the inspector. Under the new ordinance, which combines gas as well as all other kinds of pipe fitting, no person engaged in the plumbing business shall be permitted to operate without a license. Before the license is secured applicants must go through a thorough examination before the plumbing board. The fee for a certificate, or license, is $5 for employing plumbers, and $2 for journeymen. Only one member of any firm or corporation of employers will be required to take out a license.

PERSONAL MENTION

C. R. Schmidt, of the Central Foundry Co., accompanied by Mrs. Schmidt, is touring Yellowstone Park.

Clarence M. Woolley, president of the American Radiator Company, arrived in Chicago last Saturday from his European trip.

J. J. Wade, president of the Wade Iron Sanitary Manufacturing Company, of Chicago, is at present on an extended trip to the East.

Peter P. Arth, general sales manager of The American Brass Mfg. Company, of Cleveland, Ohio, has just returned from a six weeks' trip through the eastern states, where he found business exceedingly good. He is at present planning a trip through the middle western states, going as far west as Denver.

F. B. Jackson, a master plumber of Bristol, Pa., has given up the strenuous life for awhile as a result of a bicycle accident which occurred last week. While mobiling a tandem with his foreman the forewheel of the machine took a notion to skid into a ditch and Mr. Jackson suffered painful though not very serious injuries.

Edward Baggot, son of Jas. E. Baggot, one of Chicago's leading master plumbers, is receiving congratulations from his many friends on the courage and presence of mind he displayed one day last week at Pistakee Bay, Fox Lake, Ill., when he saved two young ladies from drowning after their boat had capsized and they had become entangled in its ropes and sail. The young man dived in under the sail and extricated them with difficulty.

State Senator B. F. Baker, treasurer of the Kewanee Boiler Company, of Kewanee, Ill., who last week had both legs and arms broken in an automobile accident, is reported as doing well at the hospital in that city and a comparatively speedy recovery is expected. Mrs. Baker, who also was injured in the accident, is still at the hospital, but expects to be fully recovered in a few days, as her injuries were only slight. Their many friends in the trade will be glad to hear this hopeful report.

SHOWS UNIQUE SKILL IN ANCIENT ART.

John F. Wolff, vice-president of the L. Wolff Manufacturing Company, of Chicago, has recently cut a cameo of his own likeness which shows that he possesses unique skill in this art. Those who know him will see at a glance that the finely cut lines of the stone make it a faithful portrait which reflects the touch of an artist. Taking in consideration that he has never before attempted anything along this line the result is truly remarkable. Mr. Wolff has found time to cultivate his taste for art in painting and

Self-Cut Cameo of John F. Wolff.
Vice-President of the L. Wolff Mfg. Co., Chicago.

sketching, but this by no means presumes a handicraft such as the creation of this beautiful piece suggests. The rough cutting was done with a small motor driven corundum wheel and the final forming was completed with delicate hand tools. The actual time expended upon the work was twenty-seven hours. Set in a frame of gold surmounted by pearls, the cameo is as remarkable for the delicacy and beauty of its clear cut lines as for the versatility of the skill that produced it. Some time ago Mrs. Wolff expressed a desire for such a cameo and when Mr. Wolff was unable to find a cameo cutter to do the work for him he secured a blank and proceeded to cut it himself with the result herewith shown.

CONVENTION DATES.

August 9, 10 and 11, 1909.—Annual convention of the **International Acetylene Association** in New York City. Headquarters at the Hotel Knickerbocker.

August 24 and 25, 1909.—Regular quarterly meeting of the **National Association of Brass Manufacturers** in Detroit, Mich.

September 15 and 16, 1909.—Annual convention of the **National Association of Master Plumbers of the Dominion of Canada,** at Montreal.

ASSOCIATION NEWS

SOMERVILLE PLUMBERS SIGN NEW AGREEMENT.

Somerville, Mass.—The master plumbers of Somerville have signed an agreement with the plumbers' union of the city, establishing an eight-hour day, Saturday half-holidays and a minimum wage of $3.50 per day.

SALEM PLUMBERS ENJOY OUTING.

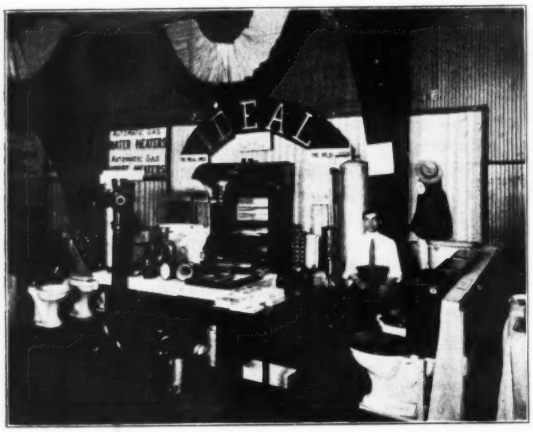
Salem, Mass.—About eighteen of the master plumbers of Salem, accompanied by members of the board of health and others, enjoyed an outing at Naugus Head on July 21. Trips were taken about the harbor and there were boat races, baseball games and other sports. A fish fry was the feature of the occasion.

NIAGARA FALLS MASTER PLUMBERS WILL HOLD JOYFUL OUTING.

Niagara Falls, N. Y.—The sixth annual outing of the Master Plumbers' Association, of this city, will take place upon Wednesday, August 25. Great preparations have been made by those in charge of the occasion. The boat will leave the Iroquois dock in the morning at nine o'clock, sharp, and it is expected that all the masters in the Falls will fold up their tents and come to the jolly occasion, forgetting for a day the cares of business life.

PLAN ELABORATE PICNIC.

Asbury Park, N. J.—The Master Plumbers' Association of Asbury Park and vicinity have made elaborate preparations for their sixth annual outing. The date on which this welcome event will be held is Wednesday, August 25. The shore dinner will be served at Green Gable, Pleasure Bay. Special cars will leave Cookman avenue and Main street at 9 a. m. The committee that has the arrangements in charge this year is composed of George Turner, chairman; Joel S. Boyce and John T. Reed. Over seventy invitations have been sent out and a record attendance is expected.



A display that attracted much attention at the recent convention of the National Association of Master Plumbers in Detroit, Mich. It is the Ideal Manufacturing Company's of that city. The picture shows one gas water heater connected with a range boiler and another with the casing open so that the internal construction is made clear. Water closet combinations, soil pipe fittings and traps, a new sanitary tee, brass goods and other products of the company are also shown.

DENVER PLUMBERS ELECT OFFICERS.

Denver, Colo.—The Denver Master Plumbers' Association held its annual meeting last week and elected the following officers for the ensuing year: President, Thomas F. Dolan; vice-president, George W. Saaler; treasurer, A. J. Gumlich; secretary, William H. Hensler; corresponding secretary, Chas. A. Dehn; trustees, James S. Small, John R. Parry and Charles Baer. The action of the strike committee in continuing the lockout against the plumbers' union was endorsed. The members of this committee were re-elected as follows: Chris Irving, Thomas F. Dolan, J. J. Johnson, W. Y. Stewart and George E. Smith.

BUFFALO PLUMBERS' OUTING A SUCCESS.

Buffalo, N. Y.—The annual outing of the Master Plumbers' Association, of this city, was held Tuesday, August 3, under the most propitious conditions. Nearly 150 master plumbers were present, as the day was exceptionally fine for a boat ride down the river and around Grand Island. Stops were made at Eagle Park, Edgewater and Electric Beach, where the members and the representatives of the supply houses present competed in the various sports of the day.

The regular ball game was played and resulted in a victory for the plumbers.

At Electric Beach the various running races were held and prizes distributed which had been donated by the supply houses in the city.

The first race was for the fat men and was won by John Honecker, Jr., of **Herlan & Honecker;** J. G. Feider second; Jas. S. Stygall third.

The leans next had a race which was won by Mr. Smith, first, and C. W. Houghtling second.

Next came a race for the supply men, in which the first prize went to C. W. Houghtling and the second to George Salzman.

The fourth race was an open event, the winners being Mr. Lang, of Lang & Odien, and Valentine J. Gerspach.

The fifth race was for the benefit of men over 50 years of age and was won by Geo. F. Smith, first, and **Daniel Lund** second.

The last race was a free-for-all race and was exceedingly interesting, for all wanted to win the prizes. This race was won by Mr. Lyth, Leo A. Smith being a close second.

This finished the events of the day and all returned to the boat for the homeward trip.

The meals, consisting of a luncheon, broiled chicken dinner and a fish fry for supper were all served on the boat.

This was the largest attended and most successful outing of the association and too much credit cannot be given to the committee of arrangements for the excellent manner in which it performed its duties; it consisted of: John J. Kavany, chairman; John B. Green, Albert C. Kranichfeld, Loren Sticht and George D. Lucas.

W. E. L.

THE FLOOD CITY MASTER PLUMBERS ENJOY ANNUAL OUTING.

Johnstown, Pa.—The annual outing of the Johnstown Master Plumbers' Association was held at Sulphur Springs on July 28, and was voted the banner outing by all present. The grounds are located on the banks of a pretty, clear stream of water some seven miles out of Johnstown and are said to be the most beautiful of the kind in this section of the state. The day dawned bright and clear and the automobiles were busy at an early hour carrying the merrymakers to the grounds.

Every master plumber in the city put business cares aside for the day and climbed into the big machine that came honking to his door. The outing was strictly for the Johnstown members but they are all such a jolly sociable lot that they couldn't think of enjoying such a good time without inviting a few near friends. Among the invited guests were S. F. Crilley and Lary

Master plumbers of Johnstown, Pa., at their annual outing at Sulphur Springs, near that city, on Wednesday, July 28, 1909.—Photograph by our Mr. Carson.

Trotter, both master plumbers of Altoona; Fred Hoffman, the master plumber, of Portage, also came over for the day. Some of the leading citizens of Johnstown, who always feel at home among the plumbers were also among the guests, namely: Dr. J. N. Wirt, Dr. A. R. Anderson, H. W. Jones, E. H. Bailey, of the Johnstown Democrat, and Dr. J. H. Schieffhauer, of Pittsburg. The commercial men in attendance were C. W. Gleason, of the Peerless Selling Co.; W. I. Creese, of The John Douglas Co.; F. E. Peters, of McCrum-Howell Co.; Chas. A. Yinkey, of the Novelty Iron Co., and Wm. Speakman, of The Union Radiator Co.

The greater part of the morning was spent in pitching quoits, running races and other such sports as men indulge in when business cares are forgotten and they again feel like boys.

The dinner was one to be long remembered and was managed as though a Fifth avenue caterer had been in charge. Some one said Jno. Flynn should have been a chef up in the Adirondacks instead of a plumber. The head waiter, who was no other than Frank Updegrave, had "Badelia, the spud juggler," backed off the boards when it came to handling the eatables.

Directly after dinner Finley's brass band led the jolly bunch to the tall field where the big event was pulled off. It was a game of the married men versus the unmarried and proved fast and exciting from the toss of the first ball until the mascot, E. C. [illegible], gathered up the last bat. S. C. Bailey, who is the oldest master plumbers in the state, was on the field and just couldn't help chasing the ball. Before the diamond is again used some of the holes in the sod made by O. W. Gleason's wonderful sliding are to be patched up. The game was a very close one and when the last inning was finished the score was 4 to 3 in favor of the married men.

Music was rendered during the afternoon and evening by Finley's orchestra and some of the master plumbers entertained with vocal solos. The return trip to the city through the pale moonlight along smooth country roads was a most delightful one and though everyone was rather tired from the day's outing, it was a good lively bunch that reached Johnstown a few hours after sunset. **O. T. Carson.**

Master plumbers and master steam-fitters are earnestly requested to send us reports of the award of plumbing and heating contracts of $1,000 or more, as soon as these have been awarded, while the information has news value. Kindly address: Editor "Domestic Engineering," 209-213 N. Jefferson street, Chicago.

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Report of an Award of Heating or Plumbing Contract

(Cut out, fill in and mail promptly)

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Chicago

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_____
plumbing or heating

the _____ -the
kind of building

amount of the contract being $_____

Owner's name _____

Address _____

Architect's name _____

Address _____

General Contractor's name _____

Address _____

Our own name _____

Address _____

PENNSYLVANIA

Littlestown, Pa.—E. J. Altoff is doing the plumbing work in the new residence erected by Robert Mehring.

Coatsville, Pa.—J. W. Burns has secured the heating work in the business block owned by the Brounstein estate.

Greencastle, Pa.—J. Lesher & Son have secured the contract for the installation of modern plumbing in two new houses being erected by Geo. M. Heilman.

Hazelton, Pa.—The Ideal Heating Company, H. L Weigel, proprietor, is at present very busy having some twelve hot water plants upon its hands to be installed. Among these jobs is one for J. P. Schlier, consideration $1,000, for hot water heat in two double residences.

Ed. G. Decker's up-to-date plumbing and heating establishment at Johnstown, Pa., and the men who have made it a notable success.

Gettysburg, Pa.—A. B. Plank, of 32 Stratton street, secured the contract for the steam heating system to be installed in the new Gettysburg National Bank. The contract amounts to $950. He also has the contract to install a steam heating system in L. Hafer's new $9,000 residence. Mr. Plank is manager of the Gettysburg gas plant but seems to find plenty of time to devote to the plumbing and heating business, judging by the number of nice contracts he has on hand this season.

BOSTON AND NEW ENGLAND

Providence, R. I.—Hyman Levy, who conducts a plumbing establishment at 8 North Main street, was visited by fire a few days ago and suffered slight damage to his shop.

New London, Conn.—Murray & Maher have been awarded the plumbing and heating contracts in connection with the extension and improvement of the court house.

Camden, Me.—A. H. Parsons has purchased the plumbing and stove business of the J. W. Bowers Company, which he will run in conjunction with his own extensive plumbing business.

Millbridge, Me.—John W. Small, who has been engaged in the hardware and plumbing business for the past three years, has closed his shop and gone to work at his trade at Presque Isle.

Springfield, Mass.—William B. Bull is having plans drawn for a new building on the site of his burned building. It will contain two stores, one of which will be used by Mr. Bull himself as headquarters for his plumbing business.

Springfield, Mass.—The Wycoff & Lloyd Company, of 19 Worthington street, has been awarded the contract for the plumbing and steam heating in the Young Women's Christian Association's new building; plumbing and heating in the New Rescue Mission; plumbing and heating in the new addition to the Republican building; alterations to the plumbing and heating systems in the Chapin National Bank; plumbing in the new residence being erected for Senator Dickinson, and heating in the new apartment house being erected for James Maloney.

Taunton, Mass.—The public property committee has awarded the contract for heating the Walker school to W. R. Park & Son for $1,199. This was the original figure when the bids were first opened. At that time there were two lower proposals, the Wordell Plumbing Company and I. F. Whitmarsh bidding $1,189 and $1,190. The committee later found that the boiler called for in the original specifications would not be large enough and so asked new bids. The Park firm turned in the same bid while the others were well above the $1,200 mark. **A. H. French.**

NEW YORK NEWS

New York, N. Y.—Barnet William Rod, a contracting plumber at 147 East 22nd street, has filed a voluntary petition in bankruptcy, with liabilities of $319,791, of which $279,000 is secured, and assets of $21,627, consisting of debts due on open accounts.

Fredonia, N. Y.—Hurley & Lyne, of this city, have been awarded by the State Commission of Lunacy at Albany, N. Y., the contract, $8,500, for the reservoir for water storage, the piping and connections at the Gowanda State Homeopathic Hospital, Gowanda, N. Y.

New York, N. Y.—Harold L. Rockmore, Inc., has been incorporated with a capital of $1,000 to conduct a plumbing business. The incorporators are Harold L. Rockmore and Abraham Rockmore, both of 261 Chester street, Brooklyn; J. Adolph Wit, of 433 Lenox avenue, New York city.

SOUTHERN NOTES

Knoxville, Tenn.—M. F. Rourke Company has been awarded the plumbing and heating contract for the high school building.

Greensboro, N. C.—B. MacKenzie, of this city, has been awarded the contract for heating the nine-story Goff building, Clarksburg, W. Va.

Ft. Thomas, Ky.—Sealed proposals will be received by Capt. John H. Wholley, constructing quartermaster until 11 a. m., August 26, 1909, for the installation of a steam heating plant in the post hospital.

Stocking-Up Time.

Bismarck said "In case of war with France look in the third drawer on the left." His plans were complete. Most battles either in war or commerce are fought out in advance. The dealer prepares by laying in stock and it is pertinent, therefore, at this time, to direct the attention of the Trade to the Norwall line of Valves as effective armament.

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Washington					

NOTES FROM THE WEST

Jefferson Barracks, Mo.—Capt. Stanley H. Ford, Q. M., U. S. A., will receive bids until August 26 for installing nine heating boilers at this post.

Waterloo, Ia.—Geo. E. Sheerer, of this city, is reported to have been awarded the plumbing contract for the school at Traer, Ia., amounting to $2,400.

Leavenworth, Kan.—R. V. La Dow, Superintendent of Prisons, Washington, D. C., will receive bids until August 16 for installing heating and ventilating apparatus in the hospital at Leavenworth.

Moorhead, Minn.—The Moorhead Plumbing and Heating Company has been awarded the plumbing contract for the new $75,000 dormitory at the Normal school here. The contract amounts to $13,460.

Braymer, Mo.—Byron B. Stevens, of Chillicothe, Mo., has been awarded the contract for the up-to-date low pressure steam heating plant to be installed at the school building in this town. Consideration $1,717.50.

Cedar Rapids, Ia.—The contract for the plumbing made necessary by the alterations in the old school building has been awarded to Messner & Company. Consideration $2,185 or $2,105, depending upon the style of closets used.

Kansas City, Mo.—C. E. Thompson, 1529 Grand avenue of this city has been awarded the plumbing and heating contract for the Knickerbocker apartments owned by J. A. Rose, 312 Century Bldg., and located between 35th and 36th streets, and Broadway and Penn street. The amount of this contract is $47,000.

St. Joseph, Mo.—The P. L. Bristol Plumbing and Heating Company, of 1004 Frederick avenue, was awarded the contract to repair and improve the heating system at the state hospital. The consideration is $2,732. The other bidders and their bids were as follows: Lewis & Kitchen, Kansas City, $23,450; Edward F. Ambler, St. Louis, $23,900; Columbian Electrical Company, St. Joseph, $24,000; Urbauer-Atwood Heating Company, St. Louis, $25,200; John B. Hughes Heating Company, St. Louis, $25,333.

TRADE LITERATURE

From The Perfect Ventilator Company, Peekskill, N. Y.—"A New and Perfect Method of Pure Air Ventilation for Water Closets and Urinals," 18 pages, 6x9 inches. This booklet describes a new method of ventilating water closets and urinals by pure air.

From The Green Fuel Economizer Company, Matteawan, N. Y.: "How To Save Coal," 16-page booklet, 3½x5½ inches, showing the value of the Green Fuel Economizer, what it is and what it does. Dimensions of the apparatus are given and various other points of information are furnished.

From Davidson Heating & Construction Company, Hanover, Pa.: "Gems for the Craftsman," a 12-page booklet, 7¼x8½ inches, containing information regarding the "Gem auxiliary heater," used for the purpose of heating water. The various ways of installing these heaters is shown, exact figures as to the amount of water or radiation heated is furnished and prices are quoted. The "Notice to the Fitter" should be read carefully as it contains valuable pointers.

From American Sanitary Manufacturing Company, Detroit, Mich.—"Hygrade Sanitary Brass Goods," a 12 page booklet, 3⅜x6 inches, containing illustrations and descriptions of soldering nipples, slip joint connections, ferrules and nickeled bath supplies. Pearce & McCall, 140 W. 42nd street, New York city, are the eastern selling agents for this company.

From Lord & Burnham Company, Irvington-On-Hudson, New York: "Catalogue 52," containing a condensed description of all the Burnham Boilers, 48 pages, 3½x6¼ inches, very handy for the pocket. Ratings, list prices and sectional measurements are given in a comprehensive manner. The catalogue is illustrated with numerous half-tone engravings illustrating the various boilers produced by the concern. When you send for this catalogue kindly give them the tip that you saw it mentioned in "Domestic Engineering."

From The F. W. Niebling Company, Norood, Cincinnati, O.: "Ice and Refrigerating Machinery," 128 pages, 6x9 inches, and "Plate Ice Making," 12 pages, 6x9 inches. These catalogues deal with the problem of artificial ice and refrigeration and the necessary machinery in a thoroughly comprehensive manner giving valuable information in relation to the various matters to be considered. The books are fully illustrated by half-tones some of which are extremely interesting. Sizes and dimensions of the machinery are given and prices are quoted.

Burlington, Iowa.—The Imhoff Sewage Disposal Company, of this city, furnished the complete sewage disposal system which was recently installed at Banker C. W. Finney's handsome residence at Eldon, Iowa.—Adv.

PATENTS

927,632. Valve Device. Victor Bloom, Chicago, Ill.

927,746. Boiler-Stand. Peter F. Murphy, Milwaukee, Wis.

927,753. Valve. Alva C. Ricksecker, Chicago, Ill.

927,755. Electrically-Heated Water-Faucet. Frank A. Robinson, Pittsfield, Mass., assignor to Robinson Electric Faucet Company, Cohoes, N. Y., a Corporation of New York.

927,783. Bowl for Water-Closets. Alexander P. Finkensieper, Brooklyn, N. Y. Filed Aug. 25, 1908. Serial No. 450,141.

927,796. Flushing Device. Francis F. Hawkins, Troy, N. Y.

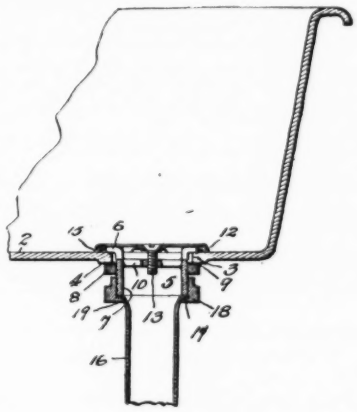
927,861. Furnace. Charles Kroeschell, Chicago, Ill., assignor to Kroeschell Bros. Co., Chicago, Ill., a Corporation of Illinois.

927,880. Faucet. Michael J. Ryan, Haydenville, Mass.

927,906. Method of Manufacturing Siphon Closet-Bowls. Charles L. Walton and George E. Pauck, Trenton, N. J.

928,041. Heating System. Egbert H. Gold, Chicago, Ill.

928,032. **Drain Connection.** E. L. Dawes, New Brighton, Pa., and J. C. Reed, assignors to the Standard Sanitary Manufacturing Company, of Pittsburg, Pa. Twelve claims are made for this invention, the first one reading as follows: "The combination of a sink or the like, having an approximately horizontal bottom pierced with a straight drain opening immediately joining the normal inner surface of the sink



bottom, and a drain connection applied to the sink at said opening including members engaging the inner surface of the sink bottom adjacent to the opening, a tubular portion carrying said members and extending through the opening, a nut threaded on the tubular member below the outer bottom surface of the sink, a fluid seal between the nut and the outer bottom surface of the sink, and a strainer near the top and overlying the said connection, the elements of the combination being constructed and arranged so that the entire fluid contents of the sink may be discharged through the drain connection."

928,095. **Faucet.** Harry M. Alderfer, Lower Providence, Pa.

928,150. **Pipe-Wrench.** Edward M. Peterson, Forest City, Iowa.

928,216. **Pipe-Wrench.** Herbert C. Ray, Sheridan, Ind.

928,255. **Attachment for Radiators.** Edward J. Glackin, Chicago, Ill.

928,304. **Water-Gage.** Clarence Carlson, Kennedy, Minn.

928,310 and 928,311. **Water-Heater.** Herbert S. Humphrey, Kalamazoo, Mich.

928,316. **Gas-Valve.** Josiph Melnik, Chicago, Ill., assignor, by mesne assignments, of one-half to Philip Arenstein, Chicago, Ill.

928,326. **Air-Compressor.** Thomas O. Perry, Chicago, Ill.

928,386. **Water-Distributer.** Walter C. Johnson, Colemans Hatch, England.

928,425. **Sink, Washtub and Similar Article.** Frank H. Caldwell, Chattanooga, Tenn., assignor to The Cahill Iron Works, Chattanooga, Tenn., a corporation of Tennessee.

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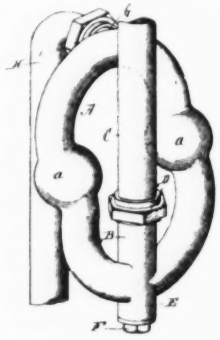
OMAHA	916 Farnam St.	ST. LOUIS, MO., L. M. Rumsey Manufacturing Co.
DETROIT	139 Jefferson Ave.	DENVER, COLO., Kellogg & Stokes Stove Co.

927,667. **Anti-Siphon Trap.** George O. Miller, North Tonawanda, N. Y., assignor to Louis A. Kelsey, North Tonawanda, N. Y. The claims made for this invention are as follows "An anti-siphon trap consisting of a body formed of a continuous tube having enlargements in the tube at opposite sides, an inlet entering the body at its lower end, and an outlet at the upper end of the body. An anti-siphon trap consisting of a substantially oval body formed of a continuous tube bent or offset between the ends of the body so that the



upper and lower portions of the latter are in different vertical planes, said tube being enlarged at the points where it is offset, an inlet entering the top of the tube at the lower end of the body and an outlet for the tube at the upper end of the body. An anti-siphon trap consisting of a substantially oval body formed of a continuous tube having an inlet entering the top of the tube at its lowest portion and an outlet at the upper end of the body, said body being offset or bent between its ends so that the upper and lower portions of the same are in different vertical planes."

928,378. **Faucet.** Joseph H. Glauber, Cleveland, O.

928,444. **Pipe-Gripping Attachment for Monkey-wrenches.** Frank Gorman, Toledo, O., assignor of one-half to William Harrop, Toledo, O.

928,459. **Automatic Intermittent Flushing-Valve.** Henry A. Kieselhorst, St. Louis, Mo.

928,481. **Drain-Tile and Sewer-Outlet Protector.** Ole A. Tenold and John A. Tenold, Northwood, Ia.

928,523. **Fastening Device for Water-Closets.** John F. Kelly, Trenton, N. J.

928,599. **Seating-Washer for Cocks.** Joseph H. Glauber, Cleveland, O.

928,650. **Low-Water Alarm.** Frederick D. Goodnough, Detroit, Mich.

928,663. **Hydrant.** George W. Johnston, Springfield, Mass., assignor to Chapman Valve Manufacturing Company, Indian Orchard, Mass., a corporation of Massachusetts.

928,665. **Heater.** James J. Kelly, Crafton, Pa.

928,696. **Lavatory.** Henry Podmore, Trenton, N. J., assignor to The Trenton Potteries Company, Trenton, N. J., a corporation of New Jersey.

928,732. **Regulating-Valve.** Henry C. Benwitz, Chicago, Ill.

928,751. **Valve.** Charles G. Harcourt, Brooklyn, N. Y.

928,757. **Automatic Water-Heater.** Rudolph Hoffman, Lorain, O., assignor to American Stove Company, St. Louis, Mo., a corporation of New Jersey.

928,859. **Water-Heater.** John W. Ellebrecht, St. Louis, Mo.

928,863. **Cleaner for Mains and Pipes.** Hugh A. Greenan and Frank O. Redford, Louisville, Ky., assignors to American Water Main Cleaning and Contracting Company, Louisville, Ky.

928,874. **Valve.** Doctor F. Morgan, Chicago, Ill.

928,896. **Pipe-Joint.** Léon Billé, Paris, France, assignor of one-half to Societe Metallurgique du Perigord, Paris, France, a corporation of France.

928,908. **Water-Cooler.** William G. Eads, Kansas City, Mo., assignor to The Eads Distilled Water Company, Kansas City, Mo., a corporation of Missouri.

927,683. **Compression Stop and Waste.** Anton C. Schuermann, Decatur, Ill., assignor to H. Mueller Manufacturing Company, Decatur, Ill., a Corporation of Illinois. Thirteen claims are made for this invention, the first one reading as follows: "In a compression stop and waste, the combination with a body having a through passage provided with a main valve seat, a lateral extension of the body in line with the seat, an annular shoulder therein provided with notches, a bonnet connected with the extension and communicating with a waste outlet, and a waste valve seat between said outlet and main valve seat; of independent valves for said seats, a stem passing through the bonnet and having an enlarged shell carrying the waste valve, a coiled expansive spring between said shoulder and shell, means for guiding the main valve longitudinally, and a screw connection between this valve and said stem."

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